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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,914	09/30/2005	Gilbert Blanchard	1022702-000291	8372

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BUCHANAN, INGERSOLL & ROONEY PC  
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EXAMINER
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FERGUSON, CHANTEL L

ART UNIT	PAPER NUMBER
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1797

NOTIFICATION DATE	DELIVERY MODE
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10/08/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,914	<b>Applicant(s)</b> BLANCHARD, GILBERT	
	<b>Examiner</b> CHANTEL FERGUSON- GRAHAM	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Summary*

1. This is the initial Office action based on the 10/551914 application filed September 30, 2005.
2. Claims 1- 15 are cancelled; and claims 16 - 29 are pending and have been fully considered.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 16-29 are rejected under 35 USC 103 (a) as being obvious over WAKEFIELD (US PG PUB 20050066571), and in view of BROOKHART (US PATENT 5880241).

Regarding claims 16-22, WAKEFIELD teaches a fuel or fuel additive comprising cerium oxide, a rare earth compound, a metal from group IIA and IIIB (**abstract**); and can be in an organic solvent (**paragraph 37**); and an antioxidant that is phenolic an alkylphenol such as 2,6-di-tert-butylphenol (paragraph 53); and an organic carboxylic acid (**paragraph 27**) which is an amphiphilic acid.

Regarding claim 23, WAKEFIELD teaches the cerium oxide particles are nanocrystalline **(paragraph 5)**.

WAKEFIELD does not teach that at least 90% of the particles are monocrystalline.

However BROOKHART et al. teaches that the crystallinity of at least 20% **(col. 65 line 15)**.

Since both references teach fuel additives , it would have been obvious to one of skill in the art to combine the references.

WAKEFIELD and BROOKHART et al. are analogous art because they are from the same field of endeavor.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the fuel and/or fuel additive of WAKEFIELD by incorporating the percent crystallinity of BROOKHART.

The motivation would have been to provide a fuel or fuel additive for the elimination of toxic exhaust emission gases in automobiles as taught by WAKEFIELD **(paragraph 2)**; as well as having a composition useful as viscosity modifiers for lubricating oils, particularly automotive lubricating oils as taught by BROOKHART et al. **(col. 55 lines 50-55)**.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claims 24-25 and 27, modified WAKEFIELD teaches that the nanocrystalline are 1-300 nm in size **(paragraph 5)**; and that the particle size must be small enough to remain in a stable dispersion in the fuel **(paragraph 5)**. The organic carboxylic

acid (**amphiphilic**) is at least 8 carbon atoms such as stearic acid (**paragraph 27**). Modified WAKEFIELD in view of BROOKHART et al. describes a linear alpha-olefin (abstract).

Regarding claim 26 modified WAKEFIELD teaches a process where the salt of cerium and chloride is reacted (**paragraph 15**); in which a process called doping is done during formation typically involves mixing, in an aqueous solution, a water-soluble cerium salt and a water-soluble salt of the dopant and raising the pH of the solution to cause the desired doped cerium oxide to precipitate (**paragraph 18**). Modified WAKFIELD in view of BROOKHART et al. teaches polymerization procedure which includes placing the composition in a drybox freezer (**see EXAMPLES 26 and 27**).

Regarding claims 28 and 29, modified WAKEFIELD teaches catalytic activity may occur when cerium oxide is added as an additive to fuel, for example petrol (**conventional fuel**) (**paragraph 5**).

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHANTEL FERGUSON-GRAHAM whose telephone number is (571)270-5563. The examiner can normally be reached on M-Th 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system,

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see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chantel Ferguson-Graham  
Chemical Examiner  
Art Unit 1797

//Cephia D. Toomer//

Primary Examiner, Art Unit 1797